

3.3

Making a Difference

In Problem 3.2, the value of Sam's stamp collection increased by the same percent each year. However, each year, this percent was applied to the previous year's value. So, for example, the increase from year 1 to year 2 is 6% of \$2,650, not 6% of the original \$2,500. This type of change is called **compound growth**.

In the next problem, you will continue to explore compound growth. You will consider the effects of both the initial value and the growth factor on the value of an investment.

Problem 3.3

Connecting Growth Rate and Growth Factor

Cassie's grandmother started college funds for her two granddaughters. She gave \$1,250 to Cassie and \$2,500 to Cassie's older sister, Kayle. Each fund was invested in a 10-year bond that pays 4% interest a year.

- A. For each fund, write an equation to show the relationship between the number of years and the amount of money in the fund.
- B. Make a table to show the amount in each fund for 0 to 10 years.
- C.
 1. How does the initial value of the fund affect the yearly value increases?
 2. How does the initial value affect the growth factor?
 3. How does the initial value affect the final value?
- D. A year later, Cassie's grandmother started a fund for Cassie's younger brother, Matt. Cassie made this calculation to predict the value of Matt's fund several years from now:

$$\text{Value} = \$2,000 \times 1.05 \times 1.05 \times 1.05 \times 1.05$$

1. What initial value, growth rate, growth factor, and number of years is Cassie assuming?
2. If the value continues to increase at this rate, how much would the fund be worth in one more year?



Homework starts on page 38.